Jugtown Plains

Naples, Otisfield, Casco, & Harrison, Maine

Description:

Site Description:

Jugtown Plains is a pitch pine/heath barren on a sandy outwash plain, part of a glacial outwash plain rising to approximately 300 feet in elevation to the east of the Crooked River. The pitch pine/heath barrens at Jugtown Plains is the northernmost example of this natural community type. Their distribution follows the occurrence of glacially-derived sandy soils in southwestern Maine, where the history of fire and droughty soil conditions combine to create adequate conditions for this community type. The relatively open canopy consists primarily of white pine, pitch pine and gray birch. The understory consists of a heath shrub layer dominated by blueberry that is essentially continuous and well-developed. This community type is found on sandy, porous glacial deposits. The soils derived from these coarse glacial sands, such as Windsor loamy sand, are very well-drained soils which yield droughty conditions for vegetation. Pitch pine growing in optimum conditions can live up to 200 years old and grow to a maximum of 100 feet high. Fire is a significant factor in the perpetuation of this community type and is necessary to preserve the long-term dynamics, species composition and vegetation structure of pitch pine/heath barrens. In the absence of fire, reproduction of pitch pine is less likely and succession may lead to the dominance of white pine. Other disturbance mechanisms which expose mineral soil, such as logging, may also encourage regeneration of pitch pine.

The bog elfin (*Incisalia lanoraieensis)* (G3S3) was found east of the Crooked River approximately 0.7 miles north of Edes Falls. The larva of this species feeds exclusively on black spruce (*Picea mariana*), which is abundant in wetlands and along stream courses that bisect Jugtown Plains. The adults fly in mid to late May often high in the treetops which hampers survey efforts. Maine is considered the center of the bog elfin's range.

The pitch pine/heath community of Jugtown Plains is dependent upon recurrent disturbance for creation and maintenance (Anderson and Sneddon 1994) and is influenced by climate, soils, topography, and periodic fire. The dry, nutrient poor soils create harsh growing conditions resulting in a depauperate flora adapted to drought and fire.

Rare Species/Natural Community Table for Jugtown Plains:

Common Name	Latin Name	Status	S-Rank	G-Rank
Exemplary Natural Communities				
Pitch Pine – Heath Barren		n/a	S1	no rank
Rare Animals				
Acadian Swordgrass Moth	*Xylena thoracica*	SC	S3	G4

*see last page for explanation of ranks

Conservation Considerations :

Fire Suppression: Fire suppression is a source of stress at Jugtown Plains. Without the reintroduction of fire or some equivalent vegetation management program, pine barrens and heath barrens community types will succeed to more mesic forest types dominated by red and white oak, and white pine. Only those sites that are the most xeric or frost prone will likely maintain barrens habitat. A loss of barrens community types will lead to a loss of habitat for barrens dependent moths and butterflies. Small pockets of barrens may persist, but the distribution of these pockets may not be adequate to maintain the viable populations of these species.

Gravel Mining: Mining can have a direct negative impact through permanent loss of habitat, as well as potentially impacting stream sedimentation and water quality. In some cases, restoration of abandoned gravel pits may be possible but the feasibility of such projects may be restrictive.

Timber Management: Timber management can lead to increased fragmentation and isolation of habitat patches and conversion to other forest types. However, timber management, applied properly within pitch pine habitats may actually help regenerate some barrens community types.

Wetlands and Aquatic Systems: The integrity of wetlands and aquatic systems including all the processes and life forms they support are dependent on the maintenance of the current hydrology and water quality of these systems. Intensive timber harvesting, vegetation clearing, soil disturbance, new roads, and development on buffering uplands can result in greater runoff, sedimentation, and other non-point sources of pollution.

Aerial spraying: If Gypsy moths become a problem in the vicinity of Jugtown Plains and aerial spraying BT (Bacillus thuringensis) is called for, care should be taken not to let BT impact the barrens area. While BT is believed to pose no threat to higher organisms, it is NOT host specific within the order Lepidoptera and thus poses a potentially severe threat to the area's rare lepodopterans (moths and butterflies). For this reason, wide buffers (1/2 mile) should be flown around sections of pine barrens hosting known occurrences of rare lepodopterans when spraying pesticides for control of gypsy moths and other pests.

Protection Status:

The core area of the site is owned by The Nature Conservancy. Surrounding the core area is a forested block that is under a conservation easement that is held by The Nature Conservancy.

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

S3 Rare in Maine (on the order of 20-100 occurrences).

S4 Apparently secure in Maine.

S5 Demonstrably secure in Maine.

Note: **State Ranks** are determined by the Maine Natural Areas Program.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

G3 Globally rare (on the order of 20-100 occurrences).

G4 Apparently secure globally.

G5 Demonstrably secure globally.

Note: **Global Ranks** are determined by The Nature Conservancy.

STATE LEGAL STATUS FOR PLANTS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's endangered and threatened plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future, or federally listed as Endangered.

T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.

Visit our web site for more information on rare, threatened and endangered species!
http://www.state.me.us/doc/nrimc/mnap/factsheets/mnapfact.htm